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PATENTS, TRADEMARKS & RELATED INTELLECTUAL PROPERTY MATTERS

03/139

September 19, 2005

Hon. Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

In re Application of:

Yong C. Kim, et al.

Serial No.: 10/613,199

Group Art Unit: 2832

Filed: July 03, 2003

Examiner: Marina Fishman

For: ADJUSTABLE SNAP ACTION SWITCH

Dear Sir/Madam:

Enclosed are 3 copies each of a new appeal brief with appendices, in response to the Notification of Non-Compliant Appeal Brief dated August 23, 2005 wherein boxes 8 and 9 were checked, which relate to evidence and decision appendices

Enclosed are the following:

1. 3 copies of Appeal Brief (signed).
2. 3 copies of Appendixes:
  - a.Appealed Claims
  - b.Evidence Appendix
  - c.Related Proceeding Appendix
3. Return Postcard.

The Commissioner of Patents and Trademarks is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Account No. 06-1985.

I hereby certify that this paper or fee is being deposited with the United States Postal Service as First Class Mail on September 19, 2005 and is addressed to Commissioner for Patents, Board of Patent Appeals and Interferences, P.O. Box 1450, Alexandria, VA 22313-1450.

Respectfully submitted,



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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Yong C. Kim, et al.

Serial No.: 10/613,199

Group Art Unit: 2832

Filed: July 03, 2003

Examiner: Marina Fishman

For: ADJUSTABLE SNAP ACTION  
SWITCH

BRIEF FOR APPELLANTS  
UNDER 35 CFR 1.192(c)

Hon. Commissioner for Patents  
Alexandria, VA 22313-1450

September 19, 2005  
Los Angeles, CA 90024

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This is an appeal from the Examiner of Group Art Unit 2832 rejecting claims 1, 4-6 and 9. The only other claim is claim 10 which was allowed.

REAL PARTY IN INTEREST

The real party in interest is Barksdale, Inc., a Delaware corporation located at 3211 Fruitland Avenue, Los Angeles, CA 90058.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

STATUS OF CLAIMS

Pending: Claims 1, 4-6, 9 and 10

Canceled: Claims 2-3 and 7-8

Appealed: Claims 1, 4-6, and 9

STATUS OF AMENDMENTS

An amendment was filed subsequent to the final rejection to cancel claim 2 and add claim 10. The amendment was entered.

SUMMARY OF THE INVENTION

The present invention is an improvement in a snap action switch of the type shown in applicant's Fig. 7, where a middle contact (40) can snap up against an upper contact (42) and down against a lower contact (44). The middle contact (40) lies on an actuation blade (54). Applicant's Fig. 4 shows that the actuation blade has an actuation location (e.g. a rivet 80 mounted at 70) that can be depressed to snap the middle contact (40) upward. Applicant's Fig. 7 shows a rivet upper face (104) and shows the middle contact (at 40) pressing down against the lower contact (44). When the rivet upper face is depressed to a first snap height (110), the middle contact snaps up against the upper contact (42). When the rivet top is then allowed to rise above a second snap height (112), the middle contact (at 40A) snaps down against the lower contact (44.).

To adjust the height at which there is downward snapping, the height of the entire snap action switch (12 in Fig. 2) relative to an operator tripping end (34) can be adjusted. However, this also affects the height at which there is upward tripping so such adjustment is not satisfactory.

The invention allows a precise change in the snapping height in one direction (without significantly changing the snapping height in the opposite direction) by precisely adjusting the height of one of the nonsnap (fixed) contacts. In Fig. 5 applicant shows an adjustment screw (136) that can be

turned to raise or lower the upper contact (42). This changes the height (112 in Fig. 7) for downward snapping of the middle contact away from the upper contact 42 and against the lower one 40. This allows an engineer who finds that one of the snap heights is not quite right, to make a fine adjustment without affecting the other snap height.

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

All of the rejected claims 1, 4-6 and 9 were rejected as obvious on Kautz in view of Poling. Thus, the issue is whether or not each of these claims is obvious in view of the references.

ARGUMENT

1. The Prior Art

Kautz 5,950,811

Poling 4,920,240

2. Discussion of Each Claim

Claim 1 describes a snap action switch of the type shown in Applicant's Fig. 5 which includes upper and lower nonsnap contacts (42, 44) and a middle contact (40) between them. The middle contact lies on a tripping leg (64 in Fig. 3) of a snap action actuator (50) that has an actuation location (52 in Fig. 5). The actuator snaps the middle contact up when the actuation location is depressed beyond a first height (110 in Fig. 7) and snaps the middle contact up when the actuation location rises beyond a second snap height (112). The claim describes "means for varying the height of one of said nonsnap contacts, to thereby vary one of said snap heights at which said middle contact snaps." This allows an engineer who finds that a selected one of the original snap heights was not quite right, to adjust the height of a corresponding nonsnap contact and cause a fine adjustment to the selected original snap height, all without affecting the other snap height.

Kautz shows, in his Fig. 1, a snap action switch with a middle contact (24 in his Fig. 1) that snaps up and down against upper and lower nonsnap contacts 18, 25. Such snapping is a result of a button 28 on his blade 22 moving up and down as a pin 34 moves the button up and later releases the button to move down. However, he does not show or suggest any means for adjustment of only the height to which his button must be raised to snap down his middle contact, or only the height to which his button must be lowered after his button was raised in order to snap up his middle contact. He does not suggest accomplishing such adjustment of one snap height, by a means for varying the height of one of his two nonsnap contacts (18, 25).

Poling shows, in his Fig. 3, an ordinary (nonsnap) switch in which a contact 157 lies on a resilient conductive beam that is surrounded by a leaf spring 49. The leafspring is biased to hold the contact 157 against a stationary contact 167. When a pivoting element 53 pivots, its flange 153 pushes the leaf spring 49 to push the contact 157 into engagement with another stationary contact 165. There is no snapping action, but only ordinary gradual movement.

Poling shows two pins 177, 179 that are "press fitted" (col. 12, lines 24-25) into holes and that determine the positions of the stationary contacts 167, 165. His two pins merely determine how far his moveable contact 157 must move to engage contact 167 or 165. His switch is not relevant to a snap action switch where the particular snap height at which a moveable contact snaps, is determined by many factors, including the position of the rivet upper surface 52 (applicant's Fig. 5), the resilience of the blade 54 on which the middle contact is mounted, etc. This complication makes it desirable to allow adjustment after installation. In addition to Poling not being relevant to a snap action switch, Poling's pins are not a "means for varying height" which is a device for easily and precisely varying height such as the screw-operated adjuster shown at 136 in applicant's Fig. 5. A press fit pin cannot be easily and precisely moved. Accordingly, claim 1 is not anticipated by Kautz in view of Poling.

Claim 4 is somewhat similar to claim 1 in describing a snap action switch

with upper and lower unsnap contacts (e.g. 42, 44 in applicant's Fig. 7), and with a middle contact that snaps up and down. Claim 4 describes means for adjusting the height of the upper contact. In a snap action switch, this changes the upper snap height (112) at which the middle contact snaps down after having first been snapped up. Poling's fixed (press fit) pins 177, 179 that are used in a non-snapping switch, are not relevant to the adjustment of the height of a contact in a snapping switch, and would not teach an engineer aware of Kautz how to adjust the snapping height of an installed switch. Accordingly, applicant believes that claim 4 is not anticipated by the two references.

Claim 5, which depends from claim 4, describes the means for varying as being a screw (e.g. 136 in applicant's Fig. 5) for pressing down a beam (130) on which the upper contact is mounted. In Poling, his pins 177, 179 are fixed in place. In Kautz there is no indication as to raising or lowering his nonsnap contact 18, 25, and such raising or lowering in Kautz would be about as difficult to do as to precisely vary the positions of the pressfit pins in Poling.

Claim 6, which depends from claim 4, describes a construction such as shown in applicant's Fig. 2. A membrane (16) to which fluid pressure is applied, applies force to an operator (20) to move it down and move down an actuator location (at 34). When the actuator location (34) of the operator thereafter moves up beyond an upper actuation height (112 in Fig. 7) the middle contact snaps down. The claim describes the means for adjusting as serving to adjust the height of the upper contact (42) which adjusts the upper actuation height (112). Poling's fixed pins 177, 179 do not allow adjustment of snapping height, as do applicant's screws that allow easy and precise adjustment.

Claim 9 describes a method for use with a snap action switch arrangement that includes a trigger leg (64 in Fig. 4) having a middle snap contact (40). As shown in applicant's Fig. 7, the middle contact can snap from a down position (40) to an up position (40A) when an actuator location (104) is

moved down below a first snap height (110). Also, the middle contact snaps down again when the actuation location rises beyond a second snap height (112). The method is to adjust the height (e.g. from 42 to 42A) of the upper contact , to thereby adjust the second snap height (112).

Kautz shows a snap action switch without mentioning how the return snap height of the actuator can be adjusted. Poling shows the position of a contact (his Fig. 3) whose position is fixed by a press fit pin 177. Poling does not suggest how to change the return snap height of a trigger leg of a snap action switch. The references together do not suggest adjusting the height of an upper contact (42 in applicant's Fig. 7) to adjust the height the height (112) at which a middle contact (40) snaps down.

It is respectfully urged that for these reason a reversal of the Examiner is in order. An oral hearing is not requested.

Respectfully submitted,



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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
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In re Application of:

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Serial No.: 10/613,199

Group Art Unit: 2832

Filed: July 03, 2003

Examiner: Marina Fishman

For: ADJUSTABLE SNAP ACTION  
SWITCH

APPENDIX TO BRIEF  
Appealed Claims 1, 4-6 and 9

Hon. Commissioner for Patents December 07, 2004

Alexandria, VA 22313-1450 Los Angeles, CA 90024

1. A snap action switch which includes upper and lower nonsnap contacts, and which includes a snap action actuator having an actuation location and a tripping leg and a middle snap contact on the tripping leg, said middle contact lying between said upper and lower contacts and said middle contact being moveable between a down position against said lower contact and an up position against said upper contact, said actuator being constructed to snap said middle contact from said down position to said up position when said actuation location is depressed beyond a first snap height and to snap said middle contact from said up position to said down position when said actuation location is allowed to rise beyond a second snap height, comprising:  
5

means for varying the height of one of said nonsnap contacts, to thereby vary one of said snap heights at which said middle contact snaps.  
10

4. A snap action switch comprising:

a frame;

an operator that is moveably mounted in said frame and that has an

operator triggering end;

5        a spring that is mounted in said frame and that has a frame-abutting end coupled to said frame and an operator-abutting end coupled to said operator and urging said operator end upwardly;

upper and lower unsnap contacts mounted on said frame;

10      a snap action actuator having an actuation location lying immediately below said operator end, to be moved downward by said operator end, said actuator having a trigger leg with a middle snap contact thereon lying between said upper and lower contacts and moveable between a down position against said lower contact and an up position against said upper contact, said actuator constructed to snap said middle contact from said down position to said up position when said actuation location is moved down beyond a first snap height, and to snap said middle contact from said up position to said down position when said actuation location rises beyond a second snap height, comprising:

15      means for adjusting the position of said upper contact to position said upper contact at higher and lower positions relative to said lower contact, to thereby change the height at which said middle contact snaps down.

20      5. The switch described in claim 4 wherein:

said means for adjusting includes a beam with a first beam location fixed to said frame, a second beam location that is spaced from said first locations with said upper contact being fixed to said beam at said beam second location, and a beam third location that is spaced from said beam first location, said means for fixing also including a screw that can be tightened to press down said beam third location.

5        6. The switch described in claim 4 wherein:

said frame has a fluid inlet, and including a membrane with a periphery fixed to said frame, and with a first membrane side exposed to said fluid and an opposite membrane side that applies force to said operator to urge said operator downwardly against said spring force;

said snap action actuator snaps said middle contact down against said lower contact when said operator moves upward beyond an upper actuation height (112), and said means for adjusting adjusts the height of the said upper contact to adjust said upper actuation height.

9. A method for use with a snap action switch arrangement which includes a frame, an operator that is moveably mounted in the frame, a spring coupled to the operator and frame and biasing the operator in a downward direction, upper and lower unsnap contacts mounted on said frame, and a snap action actuator having an actuation location lying immediately below said operator to be moved downward by said operator, said actuator having a trigger leg with a middle snap contact thereon lying between said upper and lower unsnap contacts and moveable between a down position against said lower contact and an up position against said upper contact, said actuator constructed to snap said middle contact from said down position to said up position when said actuation location is moved down beyond a first snap height, and to snap said middle contact from said up position to said down position when said actuation location rises beyond a second snap height, the method being useful to adjust said second snap height at which said middle contact snaps to said down position, comprising:

15           adjusting the height of said upper unsnap contact relative to said snap action actuator.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
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For: ADJUSTABLE SNAP ACTION  
SWITCH

APPENDIX TO BRIEF  
EVIDENCE APPENDIX

Hon. Commissioner for Patents

September 19, 2005

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The brief does not submit evidence or rely on any evidence.

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SWITCH

APPENDIX TO BRIEF  
RELATED PROCEEDING APPENDIX

Hon. Commissioner for Patents

September 19, 2005

Alexandria, VA 22313-1450

Los Angeles, CA 90024

There is no related application, patent, appeal or interference, or prior or pending appeals, interferences or judicial proceedings known to appellant, appellant's legal representative or assignee.

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